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SOVIET SCIENTISTS FIND NEW METHODS OF
STEEL PRODUCTION; PLANTS INCREASE OUTPUT

MOSCOW INSTITUTE DEVELOPS NEW METHOD OF STEEL HARDENING -- Moscow, Komsomol'skaya Pravda, 16 Feb 52

The Chair for Science of Metals and Heat Treatment, Moscow Institute of Steel imeni Stalin, is testing new compositions of steel which are to have higher mechanical properties and higher resistance to various chemical agents. Scientists of the institute are developing new methods of protecting metals against corrosion and finding ways to increase the output of metal and improve its quality.

High-frequency hardening of steel was first used on an industrial scale by the Soviet scientist, Professor V. P. Vologdin. This method of hardening steel has the following advantages: it prevents scale formation; it greatly increases the speed of heat treatment, i.e., instead of 2 or 3 hours the process now takes only a few minutes, or even seconds; and it has resulted in an improvement of working conditions.

The institute has developed a method for a two-way surface hardening of bushings for excavators and other installations. Instead of the former cementation process, which took 15 to 20 hours, the surface heating of bushings with high-frequency currents takes 1½ minutes and results in a saving of metal and labor. With this method, further mechanical treatment for the removal of scale is unnecessary.

The work of the institute is determined by practical requirements of metallurgical plants. Scientists and students of the institute have met with steelworkers of the Magnitogorsk Metallurgical Combine, the Kuznetsk Metallurgical Combine, the Novo-Tagil'skiy Metallurgical Plant, "Elektrostal'" and "Azovstal'" plants, and the "Serp i Molot" Metallurgical Plant in Moscow, to discuss problems of steel production. Professors of the institute give lectures in metallurgical plants. The institute instructs plant workers in microphotography and microhardness tests, and demonstrates the use of new machines and instruments.

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KAZAKH METALLURGICAL PLANT HAS SCIENTIFIC RESEARCH GROUP -- Alma-Ata, Kazakhstanskaya Pravda, 1 Feb 52

A cell of the All-Union Scientific Society of Metallurgists was formed in the Kazakh Metallurgical Plant during the initial period of its operation. This cell has since expanded and developed. It consists of more than 100 specialists. Members of the society meet regularly, listen to lectures on political, economic, and scientific subjects, and discuss reports of engineers and technicians who have visited leading plants in other parts of the country.

More than 26 scientific research groups of the society work in various shops of the plant. They improve technological processes, find ways to raise the productivity of rolling mills and open-hearth furnaces, and to improve the quality of finished products.

The society's cell has established close contact with scientific research institutions. Together with the Institute of Refractories, Academy of Sciences Kazakh SSR, the cell of the society is working on the problem of converting open-hearth furnaces to a higher temperature regime by improving the quality and strengthening the resistance and durability of refractories.

INCREASE OUTPUT IN 1951 -- Leningradskaya Pravda, 1 Jan 52

During 1951, steelworkers of the Kazakh Metallurgical Plant produced over 1,000 high-speed melts. The output of steel per square meter of furnace hearth reached 6.67 tons, as against 5.56 tons according to norm.

Moscow, Sovetskaya Kniga, No 1, Jan 1952

Even before the war, Soviet metallurgists achieved the highest indexes of blast furnace and open-hearth-furnace utilization in the world. With each year, the technical indexes of Soviet metallurgy have improved. In 1951, due to more efficient utilization of blast furnaces and open-hearth furnaces, an additional quantity of 1,300,000 tons of pig iron and 1,350,000 tons of steel were smelted. This is equal to the productive capacity of one large new plant.

IMPROVE PROCESSING OF ALLOYED STEEL -- Moscow, Pravda, 16 Mar 52

During 1951, Soviet metallurgists introduced many technical innovations in production processes and improved production methods. A Stalin Prize was awarded to a group composed of workers from the Zlatoust Metallurgical Plant and from the Central Scientific Research Institute of Ferrous Metallurgy, which group, under the supervision of I. N. Golikov, introduced radical improvements into the technology of preliminary processing of alloyed steel. A new technique was developed for the heat treatment of alloyed steel, which eliminates long cooling periods and prevents flake formation. The new technique reduced the length of the production cycle 30-50 percent and eliminates waste of steel.

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